



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/815,913	03/22/2001	Yong Chen	10004618-1	6205

7590 03/02/2004  
HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER

OLSEN, ALLAN W

ART UNIT	PAPER NUMBER
----------	--------------

1763

DATE MAILED: 03/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/815,913	<b>Applicant(s)</b> CHEN, YONG	
	<b>Examiner</b> Allan Olsen	<b>Art Unit</b> 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 11-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/22/2001, 9/2/2003</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Election/Restrictions***

Applicant's election of Group I (Claims 1-10) as well as the election of species wherein the alignment is based upon the detection of a tunneling current, in their response filed December 23, 2003 is acknowledged. Applicant indicated that the election was made with traverse, however, because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). It is noted that Applicant amended claim 11 (Group II – product claim) to be a product-by-process claim and Applicant suggests that claim 11 should now belong to Group I because “the only limitation of claim 11 is the process step as claim 1, and, perforce, any search for claim 11 must include the same search parameters as claim 1”. On this point the Examiner disagrees because the patentability of a product-by-process claim is not determined by the method steps but only by the final product that results from the claimed method steps. A product made by a different method but undistinguishable from the product made by the claimed process would render the claimed product-by-process unpatentable. As such, the method limitations set forth in a product-by-process claim do not define the scope of the search that is undertaken during the examination of a product-by-process claim.

The requirement is still deemed proper and is therefore made FINAL.

### ***Specification***

Applicant is thanked for providing the clarification that was requested by the Examiner. Specifically, the Examiner inquired about the last sentence of the fifth paragraph on page 3 (lines 21-22). This portion of the specification is directly correlated to the limitation of claim 10. In view of Applicant's response, the Examiner understands claim 10, which reads:

*"The method of claim 7, further comprising exposing the thinned regions of the transferred relief pattern",*  
to mean, that the portion of the substrate that underlies the thinned regions of the transferred relief pattern is exposed.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 recites the limitation " the thinned regions of the transferred relief pattern". There is insufficient antecedent basis for this limitation in the claim. This is easily remedied by making claim 10 depend upon claim 9.

Art Unit: 1763

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 1, 2 and 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,772,905 issued to Chou in view of US patent 5,866,806 issued to Samsavar et al. (hereinafter, Samsavar).**

Chou teaches an imprint lithography alignment method. Chou teaches providing alignment marks on an imprint mold and on the substrate to be imprinted. Chou teaches using an electrical alignment technique for example, by using capacitance sensors (column 6, lines 47, 60-65). Chou teaches etching the imprinted pattern to transfer the pattern to the underlying layer.

Chou does not teach measuring a tunneling current to determine the alignment.

Art Unit: 1763

Samsavar teaches that capacitance sensing and measurement of tunneling current may both be used to determine the proximity or alignment of two features (column 9, lines 3-20).

It would have been obvious to one skilled in the art to measure tunneling current to align the mold and substrate of Chou because Chou generically teaches using an electrical alignment technique. Chou provides capacitance sensing as an example of an electrical alignment technique and Samsavar teaches that the measurement of capacitance and the measurement of tunneling current are recognized in the art as equivalent means for determining the alignment of two features.

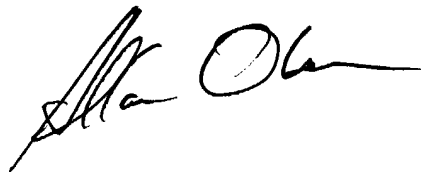
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allan Olsen whose telephone number is 571-272-1441. The examiner can normally be reached on M-F 1-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Mills can be reached on 571-272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1763

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Allan Olsen", is written over a horizontal line.

Allan Olsen  
Primary Examiner  
Art Unit 1763